

**Espacenet****Bibliographic data: JP 2007525956 (T)****NOVEL beta-ACTIN AND RPS21 PROMOTERS AND USES THEREOF**

Publication date:	2007-09-13				
Inventor(s):					
Applicant(s):					
Classification:	<table><tbody><tr><td>- International:</td><td>A01K67/027; A61K48/00; C07H21/04; C07K14/47; C07K16/22; C12N15/09; C12N15/79; C12N15/85; C12N5/06; C12N5/10; C12N9/02; C12N9/16; C12N9/24; C12P21/02; C12P21/08</td></tr><tr><td>- European:</td><td>A61K48/00D; C07K16/22</td></tr></tbody></table>	- International:	A01K67/027; A61K48/00; C07H21/04; C07K14/47; C07K16/22; C12N15/09; C12N15/79; C12N15/85; C12N5/06; C12N5/10; C12N9/02; C12N9/16; C12N9/24; C12P21/02; C12P21/08	- European:	A61K48/00D; C07K16/22
- International:	A01K67/027; A61K48/00; C07H21/04; C07K14/47; C07K16/22; C12N15/09; C12N15/79; C12N15/85; C12N5/06; C12N5/10; C12N9/02; C12N9/16; C12N9/24; C12P21/02; C12P21/08				
- European:	A61K48/00D; C07K16/22				
Application number:	JP20060517171T 20040624				
Priority number (s):	US20030480768P 20030624; WO2004US17422 20040624				
Also published as:	<ul style="list-style-type: none">WO 2005000888 (A2)WO 2005000888 (A3)US 2005026252 (A1)US 7423135 (B2)US 2008301826 (A1)more				

Abstract not available for JP 2007525956 (T)**Abstract of corresponding document: WO 2005000888 (A2)**

The invention relates to isolation of novel beta-actin and ribosomal protein S21 (rpS21) promoters and uses thereof. In particular, this invention features nucleotide sequences for rodent beta-actin promoters including, hamster, rat, and mouse, and hamster rpS21 promoter.

(19) 日本国特許庁 (JP)

公表特許公報(A)

(11) 特許出願公表番号

特表2007-525959

(R2007-52695M1)

(43) 会期日 平成19年9月13日(2007.9.13)

(50) lot C1

C12N 15/09 (2006.01)
AO1K 67/027 (2006.01)
C12N 9/16 (2006.01)
C12N 9/24 (2006.01)
C12P 21/02 (2006.01)

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C12N	15/00	ZNA
AO1K	67/027	
C12N	9/16	
C12N	9/24	
C12P	21/02	

モード (本文)

4B024
4B050

4B050

4B065

C 12 P 21/02

審查請求 有 予備審查請求

(全 39 頁) 最終頁に続く

(21) 出願番号	特願2006-517171(2006-517171)
(62) (22) 出願日	平成16年6月24日(2004.6.24)
(54) 詳説文提出日	平成18年2月16日(2006.2.16)
(56) 国際出願番号	PCT/US2004/017422
(57) 国際公開番号	W02005/000888
(58) 国際公開日	平成17年1月6日(2005.1.6)
(59) 優先権主張番号	60/480,768
(63) 優先日	平成15年6月24日(2003.6.24)
(53) 優先権主張国	米国(US)

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　　1424, ケンブリッジ, ケンダルストリート 500
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　　37

骨筋肉に働く

(54) [西側の名前] 新規S-アクチンおよびRPS21プロモーター、ならびにこれらの使用方法

(57) · · · · ·

621-
-tpS21-
-tpS21-

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1 *2* *3*

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7 *8* *9*

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10 *11*

7 *8*

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.....-15.....
.....-18.....
.....-16.....
.....-20.....
.....-19.....-tpSE3.....10
.....-19.....
.....-28.....
.....-24.....20
.....-25.....
.....-23-26.....
.....-27.....
.....-18.....-tpSE3.....80.....
.....-6.....
.....-29.....
.....-29.....
.....-31.....
.....-22.....40
.....-33.....
.....-ATCC-PTA-5309-
.....-ATCC-.....-tpSE3.....
.....

621

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200

fernandez et al. • 1999 • Gene Expression System
s. Academic Press

"Safety

Xu et al.: 2001: *Gene* 272: 149-156. © 2001 30

• Xu et al. • • • • •

* * Bioorg. Khim. 26* 6* * 392-396* *

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www.SQ1

TPS21*** * *

289

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• Molecular Cloning: A Laboratory Manual - 2nd edition, Sambrook et al., 1989
Cold Spring Harbor Laboratory Press.

.....**75SE**..... 38

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.....-pp6@1-.....

See [Section 10.1](#) for a detailed description of the `get` method.

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⁵⁸ See, for example, the discussion of the 1992 Constitutional Convention in the *Constitutional Convention of 1992: A Report to the People of South Africa* (Cape Town, 1993).

.....-DEAE-.....

.....-1-.....-30-
.....-DHFR-.....-DHFR-.....-DHFR-

.....-GTX-.....-DHFR-.....-DHFR-
.....-DHFR-.....-DHFR-

.....-2-.....-20-
.....-G6-.....-G5-
.....-GSS-.....

.....-Assayed-1995-.....

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.....-A. CHO-K1-.....

.....-CHO-K1-.....-American Type Culture Collection- Manassas, VA-.....-ATCC-.....-CRL-96
18-.....-10%-.....-GDS-.....-Invitrogen-.....-925-.....

.....-15g/L-.....-DE-52-.....-Whatman, Kent, UK-.....-250ml-.....
.....-28-40%-.....-O₂-.....-6%-.....-CO₂-.....-97-.....

.....-68rps-.....-S-.....-RNA-.....-98-
% v/v-.....-925-.....-50

```

*-----* mRNA *-----* 7 mg/L *-----* 0
*-----* B. RNA *-----*
*-----* RNA * Promega Madison, WI *-----* RNAgents *-----* CHO-K1 *-----*
*-----* *-----* 5'-p-RNA NorthernMax *-----* Gly *-----* Ambion, Austin, TX *-----*
*-----* *-----* glycoxal *-----* *-----* *-----* *-----*
*-----* *-----* RNA *-----* Schleicher & Schuell, Dassel, Germany
*-----* *-----* PCR *-----* *-----* *-----* *-----* 10
*-----* GenBank *-----* *-----* M96636* nt 14-383 *-----*
*-----* GenBank *-----* *-----* U20414* nt 238-381 *-----* EF-1* GenBank *-----*
*-----* *-----* 080622* nt 7-192 *-----* rpS21* GenBank *-----*
*-----* X79059* nt 68-340 *-----* GenBank *-----*
*-----* 999692* nt 182-303 *-----* *-----* 3 *-----*
*-----* GAPDH *-----* Ambion* Austin, TX *-----* PCR *-----* PCR *-----*

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遺伝子	プライマー	配列	配列番号
β-アクチン	フォワード	GCTCTTTCTTCGCCGCTCC	8
β-アクチン	リバース	ACCACCCCTTCAGCCCTTCCC	9
EF-1	フォワード	GAACGCGAGGTGTTGTGAAAA	10
EF-1	リバース	CTCGGCAGCCCTCTCT	11
rpS21	フォワード	GTGGACCTGTACGTGC	12
rpS21	リバース	TTCTCACTTTTATTATGAC	13
フェリチン	フォワード	CGCCAGAACATACCAACCAGGAC	14
フェリチン	リバース	TTCAAGGCCACATCATCCCG	15
ガレクチン	フォワード	TGGTCGCAAGCAACCTGAAATC	16
ガレクチン	リバース	TTGAAGTCACCGCTGCGCG	17

37

SAGE

存在量	タグ	遺伝子	配列番号	同定
38	CATGGAAGCAGAAT	Alu 反復	19	J00052
33	CATGCAGGAGCTTC	Mito COX I	20	PCR
27	CATGGGGAGCGT	リボソームタンパク質S21	21	PCR
27	CATGGTACTGACAC	Mito COX III	22	PCR
20	CATGGCCCTCCAAGG	GAPDH	23	X52123
20	CATGATAATACGTA	Mito ATPase 6	24	M14311
19	CATGCCCTTAAATCC	B-1 反復	25	PCR
18	CATGAATCGGAGGC	Mito シトクロムB	26	J01436
18	CATGAGGCAGACAG	EF-1	27	D00522
18	CATGGGGCAGACAG	ガレクチン(L-14)	28	M96676
16	CATGGTGGCTCACAA	Alu 反復	29	J00056
15	CATGTTGGCTGCGC	フェリチン重鎖	30	M99692
14	CATGCCCTGTGCGC	マッチなし	31	
13	CATGAGAGCGAAGT	リボソームタンパク質L41	32	X82550
13	CATGAGGAGGCTCA	ミトコンドリアNADH デヒドロゲナーゼ	33	PCR
12	CATGCCCTGAGTCC	B-アクチン	34	AF014363

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細胞株	CMV プロモーター	β -アクチン・プロモーター
BHK-21	8.3 ± 0.4	121 ± 99.8
HEK293	139 ± 9.9	102 ± 8.3

• Ratles norvegicus • • • • • GenBank • • • •
• NW_042778 • • • • • 47% • • • •

----- 68% ----- GenBank
----- RT-039324 ----- *Mass suscetus* ----- 6 -----

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プール	20 nM MTXでのASMの発現	200 nM MTXでのASMの発現
CMV-ASM プールA	4.3	8.2
CMV-ASM プールB	16.9	9.5
CMV-ASM プールC	3.6	3.7
β-アクチン-ASM プールA	33.5	100.0
β-アクチン-ASM プールB	59.3	27.9
β-アクチン-ASM プールC	45.6	90.5

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ベクター	GAA 発現 <2 pg/細胞/hr	GAA 発現 2-5 pg/細胞/hr	GAA 発現 5-8 pg/細胞/hr	GAA 発現 8-10 pg/細胞/hr
pGZ3IC-GAA	16%	50%	26%	8%
pGZ6IC-GAA	52%	34%	14%	0%

CHO-BXB11	4.5	rpS2
rpS2	GMV	
7		
200nM MTX	2.8nM MTX	2
0nM MTX	4.5	
	4.5	
6	4.5	rpS2
2.8	4.5	ASM
CMV	7	

プール	ASM nU/細胞/24 hr (20 nM MTX) の発現	ASM nU/細胞/24 hr (200nM MTX) の発現
rpS21-ASM プールA	12	34
rpS21-ASM プールB	13	30
rpS21-ASM プールC	16	41

プール	ASM発現
CMV-ASM プールA	38
CMV-ASM プールB	193
CMV-ASM プールC	44
β-アクチン-ASM プールA	361
β-アクチン-ASM プールB	125
β-アクチン-ASM プールC	515
rpS21-ASM プールA	342
rpS21-ASM プールB	60
rpS21-ASM プールC	51

200nM MTX	rpS2	ASM	GMV
	7		
ASM	CMV	5	5
rpS2	ASM		

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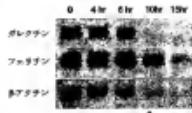
-6-

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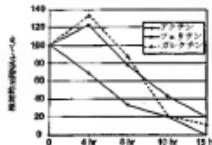
20

194 *Journal of Health Politics, Policy and Law* / Spring 1995

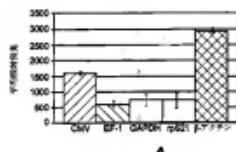
1



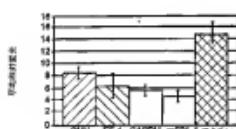
4



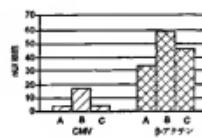
8



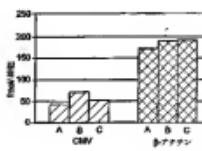
A



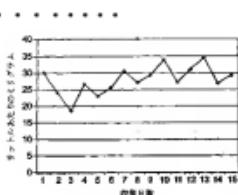
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2007525956000001 x=1

卷之三十一 288 (2006.3.28)

• EPS21: A PRACTICAL APPROACH TO THE DESIGN OF POLY(1,3-PROPYLENIC ACID) POLYMERS

* * * DNA *

• P6R •

*フォワー ID: AGCTCTAATACGACTCACTATAGGGC (配列番号:40)

118-3:CTCTAGGCCAGCGGAGCGGAG (reverse :41)

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PUR • • • • • ~~nitrogen~~ = ~~nitrogen~~

• • • 91 p. 371

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Chantals

PROBLEMS

PTA-6194 • • • American Tissue Culture Collection, P.O. Box 1549, Manassas, VA
20108 U.S.A. 2005 B-5 • • • • •

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• 100 •

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ATCC

•PTA• 6149•

• • •

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- -MTC

• P 7 / p. 530 9

• 9 • kb • AVG 11 •

-2500-

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-2- -2-

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-2- -18-

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-3- -3-

90

-3- -23-

80

-3- -2600-

90

-15- -17- -18- -21-

-24-

-24-

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-24- -28-

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-24-

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-38-

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-31-

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-38-

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-33-

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-15- -17- -18- -21-

INTERNATIONAL SEARCH REPORT

		Priority application No. PCT/US2004/017422
I. CLASSIFICATION OF SUBJECT MATTER IPC 7 C12N15/79 C12N15/85 C12N5/10 A01K67/027		
According to International Patent Classification (IPC) or in both national classification and IPC		
II. FIELD BRANCHES		
National classification (countries/identification system followed by classification symbol) IPC 7 C12N A01K		
Documentation extended other than minimum documentation to the extent that such documents are indicated in the fields recorded		
Electronic data base consulted during the International search (name of data base and, where practical, search terms used): EPO-Internal, Sequence Search, BIOSIS, WPI Data, PAJ		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Character of document, with indication, where appropriate, of the relevant passages	Reference to claim No.
X	BEDDINGTON R S P ET AL: "AN IN SITU TRANSGENIC ENZYME MARKER FOR THE MIGRATION OF INNER CELL MASS CLONES DURING EARLY ORGANOGENESIS" DEVELOPMENT, COMPANY OF BIOLOGISTS, CAMBRIDGE, GB, vol. 106, no. 1, 1989, pages 37-46, 2, XP001068884 ISSN: 0950-1991 page 38, column 1 - column 2; figure 1	1-10, 13, 20, 21
y		1-21, 35 -/-
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box Q.		<input type="checkbox"/> Patent family members are listed in annex.
<p>* Special categories of cited documents:</p> <p>*'A' document relating the general state of the art which is not considered to be of particular relevance</p> <p>*'B' document not published on or after the International filing date</p> <p>*'C' document which may show a claimed invention claimed in another document, but which is not explicitly disclosed in the document in question</p> <p>*'D' document relating to an oral disclosure, news, exhibitions or other sources</p> <p>*'E' document published prior to the International filing date but later than the priority date claimed</p> <p>*'F' later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*'G' document of particular relevance; the claimed invention is not explicitly disclosed in the document in question but includes an inventive step when the document is taken alone</p> <p>*'H' document of particular relevance; the claimed invention cannot be considered valid without reference to the document in question</p> <p>*'I' document which is not explicitly disclosed in the document in question, but which contributes being obvious to a person skilled in the art</p> <p>*'J' document member of the same patent family</p>		
Date of the actual completion of the International search		Date of mailing of the International search report
29 December 2004		29.03.05
Name and mailing address of the ISA European Patent Office, P.O. Box 8010 Potsdamerstr. 2 DE-1020 Berlin Tel. (030) 33 86-2000, Fax (030) 33 86-2016 File (030) 33 86-2016		
Authorized officer Mabit, H		

INTERNATIONAL SEARCH REPORT

Int'l application No.
PCT/US2004/017422

Box II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. **Claims Not:**
because they relate to subject matter not required to be searched by this Authority, namely:

2. **Claims Not:**
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be conducted, specifically:

3. **Claims Not:**
because they are dependent claims and are not drafted in accordance with the second and third sentence of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims No.:

4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claim(s) it is covered by claims No.:

1-21, 35

Remarks on Patent

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

International Application No. PCT/US2004/017422

FURTHER INFORMATION CONTINUED FROM PCTISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-21, 35

an isolated rodent beta actin promoter chosen from nucleotide sequences set forth in SEQ ID N°1, 2, and 3, or a variant thereof having promoter activity, and subject-matter related thereto

2. claims: 22-34, 36

an isolated rps21 promoter having the nucleotide sequence set forth in SEQ ID N°39 and subject-matter related thereto

INTERNATIONAL SEARCH REPORT

Info
PCT/US2004/017422

Citation(s) DOCUMENTS CONSIDERED TO BE RELEVANT		Relevant to claim No.
Category *	Details of document, with indication, where appropriate, of the relevant passages	
X	BREITBART A S ET AL: "Gene-enhanced tissue engineering: applications for wound healing using cultured dermal fibroblasts transduced retrovirally with the PDGF-B gene." ANNALS OF PLASTIC SURGERY, DEC 1999, vol. 43, no. 6, December 1999 (1999-12), pages 632-639, XP009042066 ISSN: 0146-7043	1-11,13
Y	NUDEL U ET AL: "The nucleotide sequence of the rat cytoplasmic beta-actin gene." NUCLEIC ACIDS RESEARCH, 25 MAR 1983, vol. 11, no. 6, 25 March 1983 (1983-03-25), pages 1789-1771, XP002312115 ISSN: 0305-1048	1-21,35
Y	page 1764 - page 1765; figure 2 -A DATABASE EMBL EBI; 13 July 1983 (1983-07-13), NUDEL U ET AL.: "The nucleotide sequence of the rat cytoplasmic beta-actin gene" XP002312127 retrieved from EBI Database accession no. Y01217 the whole document	1-21,35
Y	DATABASE EMBL EBI; 21 April 1995 (1995-04-21), STAHLBOOM PA AND FRANZEN SA: "Isolation and characterization of the beta actin gene from chinese hamster" XP002312117 retrieved from EBI Database accession no. U20114 the whole document	1-21,35
Y	ELDER P K ET AL: "EVIDENCE THAT THE FUNCTIONAL BETA ACTIN GENE IS SINGLE COPY IN MOST MICE AND IS ASSOCIATED WITH 5' SEQUENCES CAPABLE OF CONFERRING SERUM AND CYCLOHEXIMIDE-DEPENDENT REGULATION" MOLECULAR AND CELLULAR BIOLOGY, vol. 8, no. 1, 1988, pages 480-485, XP002312116 ISSN: 0270-7306	1-21,35
	page 480, column 2 - page 481, column 1	
	—/—	

INTERNATIONAL SEARCH REPORT

Category		Category	Inter vention No PCT/US2004/017422
Cited (referred to) DOCUMENTS CONSIDERED TO BE IRRELEVANT			
Y	Details of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.
Y	<p>KIM TEDAK ET AL: "Gene transfer in bovine blastocysts using replication-defective retroviral vectors packaged with gibbon ape leukemia virus envelopes" MOLECULAR REPRODUCTION AND DEVELOPMENT, vol. 35, no. 2, 1993, pages 105-113, XPO09042057 ISSN: 1040-452X page 106, column 2, last paragraph - page 108, column 2, paragraph 2; table 2</p>		1-21,35
A	<p>NAKAZIMA-IIJIMA S ET AL: "MOLECULAR STRUCTURE OF THE HUMAN CYTOPLASMIC BETA ACTIN GENE: INTERSPECIES HOMOLOGY OF SEQUENCES IN THE INTRONS" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, vol. 85, no. 18, 1988, pages 6133-6137, XPO02312177 ISSN: 0027-8424</p>		

(51) int.Cl.

* * * * * 21/08 (2006.01)
* * * * * 5/10 (2006.01)* * * * * 21/08
* * * * * 5/00

(81) * * * * * AP(BW,GB,GM,KE,LS,MW,MZ,NA,SD,SL,SZ,TZ,UG,ZM,ZW),BA(AM,AZ,BY,KG,KZ,MD,RU,TJ,TM),EP(AT,HE,BG,CH,CY,CZ,DE,DK,EE,ES,FI,FR,GB,GR,HU,IE,IT,LU,MC,NL,PL,PT,RO,SE,SI,SK,TR),GA(BF,BJ,CF,CG,CI,CM,GA,GN,GQ,CW,ML,MR,NE,SN,TD,TG),AE,AG,AL,AM,AT,AU,AZ,BA,BB,BG,BR,BW,BY,BZ,CA,CH,CN,CO,CR,CU,CZ,DE,DK,DM,DZ,EC,EE,BG,ES,FI,GB,CD,GE,GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KP,KR,KZ,LC,LK,LR,LS,LT,LU,LV,M,A,MD,MG,MK,MN,MW,MZ,NA,NI,NO,NZ,OM,PG,PL,PT,RO,HU,SC,SD,SE,SG,SK,SL,SY,TJ,TM,TR,TT,TZ,UA,UG,US,UZ,VC,VN,YU,ZA,ZM,ZW

(72) * * * * *

* * * * * 4B024 AA20 RA11 RA12 RA80 CA04 CA20 BM02 EM04 GA11 HA14
* * * * * 4B050 C003
* * * * * 4B064 AG01 AG27 CA10 CA19 CC24
* * * * * 4B065 AA90X AB01 AC14 RM02 CA24 CA25 CA31